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THE GLEANER

NATIONAL AGRICULTURAL COLLEGE

Founder's Day Section--Pages 6 and 7 *"A" Day Results--Page 10*

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SCHOOL'S OUT

By Carl F. Leutner '52

As the spring season draws slowly to a close, the studying for final examinations dominates the student's time. Textbooks are working overtime, and lecture notes are being busily pored over. To combat the weather, which is definitely not conducive to studying, many a student has taken to the great out-of-doors to do his book learning. This activity continues as night falls, and the dormitory with every available lamp brightly glowing, indicating that work is being carried on within, presents quite a spectacle seldom seen on the campus.

Despite this final burst of studying, thoughts of the coming season are foremost in the students' minds. The upperclassman is looking toward his summer's work when he will put to use the knowledge he has thus far accumulated. The fact that he can improve his financial situation is of course, greatly responsible for this anxiety.

The freshman, after a brief rest following his final examinations will return to the college to participate in the actual practice course which constitutes the summer curriculum. Many a lower classman will be devoting time to his garden plot which he hopes will yield a bountiful crop in return for his honest toil.

Of course, there are other things on a fellow's mind with the approach of summer. America's favorite pastime will dominate the sport scene, and lure many a vacationing student to the baseball park. The trout streams, and bass and pickerel stocked lakes will offer many hours of fishing thrills to the angling enthusiast. The hiker will once again assemble his gear and hit the favorite woodland trails. And on hot summer days a fellow is sure to visit the beach, lake, or neighborhood pool to escape the heat.

These are just a few of the many reasons that make the student appreciate the coming of the season for which he has long been waiting,—Summer.

On the Cover
A summer view of the
Block Memorial
Chapel.

The GLEANER

NATIONAL AGRICULTURAL COLLEGE
Farm School, Bucks County, Pennsylvania

VOL. LIII — JUNE, 1949 — NO. 6

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The Gleaner is published throughout the school year by the student body of the National Agricultural College. Entered as second class matter at the Post Office at Farm School, Pa. Subscription rate—$1.50 per year.

WELCOME

Once more we're putting out the WELCOME mat by inviting you to attend our annual FOUNDER'S DAY ceremonies. We hope you will have a pleasant time at the college this year.

The student body has augmented itself with another class and in one year we shall be inviting you to attend our first college graduation.

This year the college has as in the past, a well planned program. Among those present will be many noted personalities. The glee club and band will collaborate to provide a musical program for the festivities.

* * *

WHAT'S AHEAD

Next week brings finals, after which both Juniors and Sophomores leave school to work on farms. The freshmen will have to remain at school and participate in the summer practicum as scheduled for them.

What else is ahead? Next fall the college will have four complete classes, from freshmen, to seniors . . . Another surprise will be the new GLEANER . . . New faculty members will be seen around the campus . . . So will a new building, the dorm, which we hope will be completed when we start our fall term . . . Coach Bezdek should have his football team in good condition around that time too, with the first game only a few weeks away.

Well, it looks like we better put the typewriter away for another summer, push the pile of papers on the desk aside, and close the office, as we say goodbye until next fall. We hope you have enjoyed reading the GLEANER as much as we have enjoyed bringing it to you.

FOUNDER'S DAY PROGRAM

NATIONAL AGRICULTURAL COLLEGE BAND

Invocation
RABBI JAY KAUFFMAN
Old York Road Jewish Community Center

JAMES WORK
President

STANLEY H. HINLEIN
Chairman of Committee on Arrangements

LEON MERZ
Chairman of the Board of Trustees

WILLIAM A. REITER
Trustee

HON. WILLIAM S. LIVENGOOD, JR.
Secretary of Internal Affairs
Commonwealth of Pennsylvania

Closing Prayer
REV. CHARLES F. FREEMAN
Salem Evangelical & Reformed Church

DR. JOSEPH KRAUSKOPF HONORED

Ceremonies June 5, Pay Tribute to Farm School Founder

In 1894 Dr. Joseph Krauskopf made a trip to Russia where he met Count Leo Tolstoy who impressed him with these words: "Lead the tens of thousands of people of your cities to your fertile lands and you will bless not only them, but also your country and spread a good name for your people throughout the land, for all the world hands and protects the bread producer and is eager to welcome him."

On April 10, 1896 the National Farm School received its charter "for the training of youth to become scientific and practical agriculturists." The first faculty consisted of Dr. Krauskopf, a head master, a matron and three instructors. The instructors were little more than farm managers or supervisors often overworked and underpaid. The farm had to be cultivated and bring returns, while classes for study were held only when convenient.

That very first year, the school almost went bankrupt. But Dr. Krauskopf, never losing faith, kept raising funds and carrying his message to the thousands of people, finally receiving the necessary support which the school needed. In the years following, Dr. Krauskopf's dream became a reality. The National Farm School grew and flourished producing many men who were later to become successes in their chosen careers. In 1923 Dr. Krauskopf passed away, but others took over and continued his work as a living memorial to him.

In 1946, the year of its fiftieth anniversary, the National Farm School became the National Farm School and Junior College. In 1948 it became the National Agricultural College, a senior college granting a B. Sc. in Agriculture. If Dr. Krauskopf were to see the school today he would hardly recognize it. Yet we who are here today, can be but humbly grateful for this man's untiring efforts.

Joseph Krauskopf was born on January 21, 1858 in Ostrow Posen, Russia, of a family who were lumber dealers. It was through association with his father's work that he came to appreciate nature. Accompanied by his older

(Continued on page 11)

The Late Dr. Joseph Krouskopf

FOUNDER'S DAY ADDRESS—PRESIDENT JAMES WORK

Ladies and Gentlemen, Distinguished Guests:

I bid you welcome to the second Founder's Day exercises since the National Farm School became a college. We are gathered here to do honor to the memory of the man who was truly one of the great spiritual and social leaders of his time. Not only among those of his own faith but among many of all faiths. A man who during his all too short stay with us was the inspiration alike of trustee, faculty member and student, and whose outstanding courage, great qualities of leadership, indomitable spirit, and deep love for everything pertaining to the school remains in the memory of those of us who knew him as a tradition for us to dare to achieve, to carry on.

Joseph Krauskopf was a man of great vision; a man who over half a century ago perceived and proclaimed truth which even today some of our educators fail to recognize. He saw the function of education as a guide to action and to work. He saw the errors and grievous results of snobbishness, of class and racial distinction, and he saw the futility of any form of education which did not emphasize and stress the qualities and precept of good citizenship. Yet, fifty years after Joseph Krauskopf proclaimed these truths, we still hear the president of one of our great universities trumpeting that "The universities should cling to their early ideas of raising up future ornaments of Church and State." Too many educators fail to see that many traditions and systems are doomed. They fail to see that higher education for only the privileged few is a thing of the past. They fail to see that the advancement of the so-called common man means change. They resent any kind of change.

For centuries it was considered unnecessary, yes, undesirable for the worker to receive any formal education. Education was not due him, he did not need it, he could not appreciate it. The artisan, the farmer, the producer of the world's wealth

(Continued on page 11)

MEET YOUR COLLEGE PRESIDENT

James Work—Student of N. F. S. 1913; Leader of N. A. C. 1949

By DANNY BUGESLOV '51

IT was Dr. Joseph Krauskopf, inspired by the great humanitarian and reformer, Count Tolstoy, who founded the National Farm School and gave it spiritual guidance. But it was James Work, a graduate of the school and its fifth president, thoroughly imbued with its aims, ideals and traditions, who built a superstructure on the foundation laid by the late Rabbi.

Dr. Krauskopf set the path climbing upward, President Work paved it, made it a focal point and drawing force, and used it to reach ever greater heights. Dr. Krauskopf was the man of vision, who planted the seed; Mr. Work is the practical realist who nurtured the seed, transformed its living potentialities into realities, and made it a fruitful, growing plant. For it was largely through his foresight and untiring efforts that the National Farm School within a remarkably short period of time, became a Junior, and finally a Senior College.

To the general observer, it appears to be amazing, how, into a limited span of time, Mr. Work condensed such a wealth of experiences and such a wide and varied career. Indeed, his life has been as versatile and eventful as the lives of five ordinary men. Office boy, farmer, horse breeder, draftsman, concurrently football coach, football official, Naval Aviation Reserve officer, engineer, factory manager, corporation president, corporation chairman, University professor, college treasurer, and finally college president—this is the story of James Work.

James Work was born March 4, 1893, in Philadelphia, the son of Robert Dickson and Elizabeth Berry Work.

At the age of fourteen he took his first fulltime job at the United Gas Improvement Company in Philadelphia. In 1907, he began to attend Central High School. His summers were spent working as a farm hand at Croydon, Pa.

President James Work

Led by this early love for farming, he entered the National Farm School in September, 1910. It was here at Farm School, that the three main motivating factors of James Work's life, the love for sports, never failing loyalty to *alma mater*, and the persistant will power to strive forward, first found their full expression. He was captain of the football team, captain of the track team, manager and first baseman on the baseball team, editor-in-chief of the GLEANER and president of the junior class. The President of N.A.C. graduated from what used to be N.F.S. in 1913, having completed the course, which was four years in length, in two and a half years.

After graduation, he operated a dairy farm and coached the N.F.S. football team for ten years. Two of the captains under him were Mr. Groman and Mr. Samuels, who are at present associated with N.A.C.

In 1916, he moved to Philadelphia, and worked successively as plumber, ship draftsman and supervisory draftsman, attending night school at the Franklin In-

(Continued on page 11)

JUNIOR PROM GREAT SUCCESS

Couples Doncing ot the Junior Prom

Rain, rain and more rain seems to be the motto everytime N.A.C. holds a dance, prom or informal.

The bad weather seemingly didn't stop the 100 couples who attended the National Agriculture College's first Junior Prom at the Cedarbrook Country Club on April 22.

The bulk of the crowd began arriving at 9:30 and were greeted by president of the Junior class, Gordon Davis, and his date, Miss Doris Groglin; Junior class faculty advisor, Capt. Sobel and Mrs. Sobel; and the Dean of the Graduate School, Dr. Bowen and Mrs. Bowen.

In addition to the main ballrooms, two lounges, a parking lot, a checkroom, and a coke bar were made available to the couples.

Two of the dance's highlights were the Multiplication Dance and the John Paul Jones. During the evening Paul Schomp's engagement was announced.

Pictures for the yearbook were taken by the Zecca Photography Studio, and pictures of the couples were taken by Harold Haftel.

The crowd began leaving around 1:00 a.m. with a great majority of the couples going to the Sunken Gardens and Wyncote Inn.

This year's Junior Prom was a great success both socially as well as financially.

WHO BUYS WHAT?

By George Bleibtrau '52

On April 25th, the student body was privileged to hear Mr. Joseph Rosenwald of the Affiliated Drug Company. Mr. Rosenwald, who has spoken here before and is a great admirer of the college was sponsored by Dr. Reinthaler who also introduced the speaker.

The talk was entitled "Who Buys What?" and showed how consumer potentials are determined and how they are used. Theories of mass psychology are still somewhat vague, Mr. Rosenwald said. Nevertheless, some companies try to analyze their customers and consumers, so they can better plan the distribution and marketing of products. Consumption is a question of disposal by the producer, a marketing problem, and a merchandising opportunity.

A market, explained Mr. Rosenwald, is a group of people who want to or can be induced to buy what a producer wants to sell. There are, Mr. Rosenwald went on to say, "convenience items" such as groceries and drugs which people prefer to buy near home. Then there are "shopping lines" including clothing and automobiles for which people will go a long distance. As examples the speaker gave three market centers in Pennsylvania. In Philadelphia he said, 54% of the money is spent by residents of that city, while the remainder, 46%, comes from the surrounding towns and suburban areas. In Lancaster by contrast 31% of the money comes from city residents and 69% from the surrounding area. In the Sunbury Shamokin area, only 26% of the money comes from within the towns while 74% comes from nearby.

Mr. Rosenwald went on to explain that in times when people must be urged

(Continued on page 13)

FOOD TECHNOLOGY SOCIETY ORGANIZED

By Jack Pernatin '50

Recently those students majoring in Food Industries found that they had been without an organization to represent their field at the college long enough, and decided to form a club of their own.

The following officers were elected: Norman Rosen '50, President; Richard Clark '50, Vice President; and Victor Pessano '51, Secretary.

One of the first functions of the new executives was to formulate a list of "Aims and Purposes."

They are:

(1)—The advancement of the profession of Food Technologists and the development of high professional standards among members of the society.

(2)—The formation of close professional and personal relations among its members.

(3)—The furtherance of the aims and the purposes of the Institute of Food Technologists.

(4)—The promotion of cordial and helpful relations with the faculty and Food Technology students of the National Agricultural College and other educational institutions offering courses in such fields.

The new Society hopes to become a student affiliate of the Institute of Food Technologists, and will soon make application for membership. If permission is granted the Food Technology Society will become the first society of any kind here at the college to be affiliated with a national organization.

Although most of the students in the organization are Food Industry Majors anyone in the college is welcome to join, regardless of his major.

RADIOACTIVE FERTILIZERS

By Herbert Rosenoff '50

The subject of radioactive fertilizers is definitely not a new one. Experiments have been going on for at least twenty-five years, and are still continuing on the subject of radioactivity and its effect on the soil and crops.

We all realize the magnitude of the medical uses of radioactivity but what of the possibilities of radioactivity in connection with agriculture?

General Effects of Radiation

It is a well known medical fact that when feeble doses of radium radiations or emanations are administered, they result in a stimulating effect on cells and tissues, and that, on the contrary, high or massive doses of these radiations have been disastrous and destructive to cells and tissues. This same principle applies to plants as well, and it should be noted that the agricultural experiments in which weak doses of either radium or alpha-ray material were used showed undeniably favorable results. It has already been shown that an extensive similarity exists between vegetables and animal organisms, especially as to the physiological action caused by nutritive elements, including radioactive elements. The chief difference between plants and animals lies in the fact that plants manufacture their own organic matter from mineral combinations which they find in the soil and air around them and upon which they draw, while animals obtain their nutritive matter mainly at the plant's expense, by consuming such plants as food, or consuming other animals that live upon these plants.

A Common Misconception

Whenever harmful or destructive effects have been observed in the field of radioactivation of plants, these negative results were caused by high dosages of the radioactivity employed, based upon a misconception on the part of the experimenters who consider the radioactive compounds as fertilizers themselves; actually they are to be used in conjunction with organic or inorganic fertilizer agents.

In the USSR, radium introduced in minute quantities reaching one billionth of a grain (10^{-9} gr.) and one ten-billionth of one gram (10^{-10} gr.) per kilogram of soil improved and quickened the growth and blooming of such varied plants as roses, sugar beets, peas, sunflowers, cotton, and flax.

Takeo Furuna, a Japanese agronomist, noted that in 1947, crops in the Nagasaki area increased 50-300 per cent.

Experiments run on the farm of Henry Wallace in South Salem, New York, report a 30 per cent yield increase in tomatoes grown under hydroponic conditions with the use of a radioactive fertilizer.

There remains no doubt that radioactivity has a beneficial action upon the growth of plants and germination of grains when used in minute quantities, as well as an acceleration of the nutritive processes, and therefore, the possibility exists of multiplying seasonal crops within a given period of time.

In 1923, J. S. Stoklasa stated, "The superior effectiveness of Chilean nitrate as a fertilizer over synthetic and other nitrates is ascribed to its radioactivity."

In 1934, L. L. Lagunov of the Russian Academy of Sciences said this: "Small doses of radioactive substances have a stimulating effect on plants."

Seasonal Need for Radioactive Elements

More recent experiments have shown that plants normally require certain minute amounts of radioactive elements for their natural growth, and that nature itself provides these amounts through elements such as potassium, which is always radioactive. In experiments conducted by the late Professor V. Vernadsky and his assistants at the Geo-chemical Laboratory of the Academy of Sciences of the USSR, it has been proven that plants assimilate radioactive elements during all the vegetable periods; however, the plants require a greater amount of these elements during their blooming and ripening periods, and these elements are concentrated in the young organs of the plants. These same experiments have shown the radium content to be on the order of one-hundred-billionth per cent ($10^{-11}\%$) of the live weight.

It has been shown that the best dosages for plants growing in water and sand were found to be from one billionth of one gram (10^{-9} gr.) to one ten-billionth of one gram (10^{-10} gr.) of radium, and from one ten-thousandth of one gram (10^{-4} gr.) to one hundred-thousandth of one gram (10^{-5} gr.) of uranium or thorium per liter of nutritive solution or per kilogram of sand. Uranium, radium, and thorium give a similar physiological action, and scientists believe that the optimum concentrations of separate radioactive elements for the plants are equiradioactive. In other words, these concentrations answer to approximately the same number of atoms disintegrating in a given unit of time.

Correct doses of these radioactive elements have been shown to have a beneficial effect on plants growing in soil as well as in water or sand.

Experimentation with Radioactive Fertilizers

A corporation with a special department to investigate the uses of radioactivity was established by Boris Pregel in Paris in 1933 "with a threefold aim: first, to undertake and to encourage theoretical studies in the field of radioactivity in its relation to agriculture; second, to produce a special radioactivated fertilizer; and third, to sponsor large scale and systematic experimentation in the use of this fertilizer."

His experimentation in France in 1933 proved that, under certain conditions, a radioactive fertilizer was found in at least 50% of those early experimental cases to lead to an improvement of the plant itself, and if used over a definite area, to an increase in the crop yields and especially to an acceleration of the ripening time. By 1935, the following results were obtained through the co-operation of individual French farmers: out of 1000 cases, 25% showed highly favorable results, another 25% showed favorable results, and about 50% showed no practical interest, due in part either to lack of initiative or improper handling of the radioactive compound.

New York Experiment

In 1943 an experimental project was

(Continued on page 16)

FIRST "A" DAY FULFILLS ALL EXPECTATIONS

WINNERS OF "A" DAY EVENTS

DAIRY COWS

Class	First Place	Second Place	Third Place
1	D. Barbour	W. Roberts	R. Cragle
2	J. Force	S. Caplan	P. Molter
3	C. Ginsberg	M. Scheier	F. Bushnell
4	S. Schwartz	A. Kinnunen	R. Streeper
5	C. Jones	R. Sowieralski	A. Jaffee
6	I. Moumgis	F. Staeble	H. Rosenoff

Grand Champion — S. Schwartz
Reserve Grand Champion — I. Moumgis

GRADE HEREFORD STEERS

Class	First Place	Second Place	Third Place
1	D. Brooks	G. Slothower	H. Akers

DRAFT HORSES

Class	First Place	Second Place	Third Place
1	R. Smith	C. Jones	A. Grifo

SADDLE HORSES

Class	First Place	Second Place	Third Place
1	W. Roomet	R. Smith	J. Deming

Grand Champion in Animal Husbandry — R. Smith
Reserve Grand Champion in Animal Husbandry — C. Jones

WINNERS IN HORTICULTURE EXHIBITS

Class	Kind	First Place Winners
1	Best of Type—Bees	J. Scheaffer and B. Weber
1	Most Colorful—Floral Arrangements	S. Silver and G. Davis
1	Most Educational—Bees	
1	Most Original—Orchid Display	B. Rosenberg and S. Barber
2	Landscape Model Contest	E. Cohen
3	Most Educational—Ferns	H. Kaltenthaler
3	Most Original—Miniature Roses	R. Illsemann

Special Horticultural Society Award—Orchid Display
Best Liked by Visitors—Orchid Display

POULTRY SOCIETY WINNERS

Type	First Place	Second Place	Third Place
Egg Grading	P. Kerkhoff	E. Goldstein	N. Shayer
H. S. Poultry Judging	Quakertown	Hatfield	Slatington

Highest Individual Score of H. S. Judging—Bob Rohr of Hatfield
Best Poultry Exhibit: 1st Place—Egg Cleaning and Grading
2nd Place—Incubation and feeding
3rd Place—Poultry Feed Products

OTHER EVENTS

Dogs—First, B. Rosenberg; Second, S. Spungen
Greased Pig—F. LaRosa
Wood Sawing—M. Scheier and P. Molter in 44 seconds
Faculty Milking—K. Nathan and C. Blackmon tied for first place

Over 1,000 Spectators See Various Judging Exhibits and Colorful Displays

No one went away disappointed from the National Agricultural College "A" Day on May 21 as over one thousand spectators came to the college campus to witness the various judging events, colorful displays and humorous sidelights that went into making this the first of a many-to-come annual event.

The brainchild for this day is credited to Raymond Cragle, whose ideas last fall blossomed forth into reality a few weeks ago.

Visitors began pouring onto the campus a long time before the 10 a.m. opening hour, while some of the exhibits were still in the final stages of completion.

Someone remarked that it looked like a three ring circus because of the many things going on at one time. It might be said that the opening ceremonies began as thirty cows were brought up from the dairy along U. S. Highway 202, with state troopers holding back the automobile traffic.

Brilliantly painted farm machinery lined the main drive and flags hanging overhead gave the incoming cars a small glimpse of what was to follow.

Cattle judging started promptly at 10 a.m. in the main arena set up in the Engineering Building. At the same time down at the gym the various displays and exhibits presented by the Horti-

In the foreground, Stan Schwartz is standing with his Grand Champion Heifer

The orchid exhibit which took three awards at the Horticulture Judging Contest

culture Society were being judged. In another section of the gym the members of the Poultry Science Club were selecting winners in the egg contest.

From 1 to 3 p.m. beef cattle, draft horses and saddle horses were judged in an outside ring while the Poultry Club was selecting winners in their high school poultry judging contest.

The Kennel Club judging contest was followed by an obedience training demonstration which held the crowds spellbound.

At the same time exhibits in art were being shown in the Student Lounge and the Food Technology Society was exhibiting frozen foods and laboratory equipment and showing movies throughout the day.

The next event took place at 4 p.m. at the college pond as six contestants slipped and fell in their attempt to catch a greased pig. The winner of this amusing contest was Frank LaRosa.

The last events of the afternoon were Log Sawing and Faculty Milking Contests, which attracted many spectators.

In the evening an Old Fashioned Hoe Down was held in the Engineering Building to put a finishing touch on the day's activities.

With everything back to normal again, plans are already under way for a bigger, more colorful and better show next year which should triple this year's attendance.

"A" Day Glimpses

The boys showing cows took turns the night before the show in watching the animals so that they wouldn't sit down in any manure. . . . The greased pig contest didn't turn out as expected. The pig got through the fence and headed across the pond with the boys in full pursuit as some fell and others tripped into the pond. . . . The dairy cattle judging went slowly and was forced to run an extra hour. . . . Of the six high schools represented in the poultry judging, two failed to show up. . . . It was a close race in the faculty milking contest as Mr. Nathan and Mr. Blackmon tied for first place. They were invited down to 4:30 a.m. dairy detail to break the tie. . . . Where did Pete Kerkhoff learn so much about eggs?

Poultry Contest Results

In the March issue of the GLEANER, we announced a poultry essay contest on the topic, "The Prevention of Poultry Diseases Through Sanitation and Vaccination." The best essay was written by *Erwin Goldstein* '51 who won the $25 first place award. Second and third prizes of $15 and $10 respectively were won by *Nathan Sandler* '50 and *Joe Fulcoly* '50.

The contest was sponsored by Dr. Arthur D. Goldhaft of the Vineland Poultry Laboratories who supplied the prizes. The judges were Dr. Ellis of Massachusetts State College, Mr. Toor of Sandy Ridge Farm, and Mr. Golden of The Amburgo Company.

The winning essay will be printed in its entirety in the first edition of the GLEANER next fall.

President Work

(Continued from page 7)

stitute and the Philadelphia Textile School for seven years. In 1921, he was appointed assistant chief engineer at the Naval Air Station at Lakehurst, New Jersey, where he was a member of the test crew of the rigid air ship Shenandoah. He made numerous developments in the design of dirigibles and was head coach of the Air Station football team.

In 1926, Mr. Work was appointed assistant manager of the Naval Aircraft Factory in Philadelphia. Until 1929, while holding this position, he taught aviation subjects at Temple University. The Reserve Naval Aviation Unit, of which he was engineering officer with the rank of Lieutenant, won the Noel Davis Trophy as the best reserve unit in the Navy for two successive years.

But Mr. Work did not stay in Philadelphia. In 1928, he moved to California and became Vice-President of the Lockheed Corporation. When this company was made a subsidiary of Detroit Aircraft Corporation, he became Vice-President and General Manager of the latter. Mr. Work also managed the Parks Air College in East St. Louis, one of the outstanding aviation colleges in the country and the first of its kind to obtain governmental approval.

When the Brewster Aeronautical Corporation was organized in New York in 1932, Mr. Work became its first president. In 1938, he was appointed chairman of the Board.

Besides all his activities in the field of business, Mr. Work has been active in many organizations engaged in welfare work, and has served as a member of Mayor La Guardia's Slum Clearance Committee and as a Trustee of Abington Hospital.

Throughout his versatile career, Mr. Work had maintained close relations with the school from which he was graduated. When, in 1945 our President retired from active business, his life became thoroughly interwoven with and devoted to N.F.S.—N.A.C., *alma mater*.

Dr. Krauskopf

(continued from page 6)

brother he came to the United States at the age of fourteen and secured employment with a tea merchant in Fall River, Mass. Mrs. M. B. Slade, learning of his desire to become a rabbi, helped him enter the newly formed Union College, in Cincinnati, from which he graduated in the first class.

Rabbi Krauskopf became the head of a large congregation in Kansas City and soon received a widespread reputation for his civil and communal interest in the welfare of the city, as well as for the originality of his lectures. In 1887 the faculty of his alma mater conferred upon him the degree of Doctor of Divinity. That same year he was called to the pulpit at a congregation in Philadelphia where he remained the rest of his life.

People knew Dr. Krauskopf as the courageous preacher, the community worker, the organizer, the executive, the leader. They saw him attain success in whatever he undertook. He had faith in the realization of his dreams. He knew that life could be sweeter, fuller, and better, if one had the earnest will to make it so.

Founder's Day Address — President James Work

(Continued from page 6)

did not need that high knowledge or culture, or in fact any knowledge or culture which would allow him to truly enjoy the fruits of his labor.

Joseph Krauskopf saw the fallacy of this philosophy over fifty years ago. He saw the malignancy of racial and religious distinction. His vision, and his efforts brought forth the College you see here today. His ideals and his philosophy are today the breath of the College as they were the life of the School he founded.

This is the living proof of a great soul.

COLLEGE GROUP VISIT USDA EASTERN REGIONAL RESEARCH LABORATORY

By David Blumenfeld '50

A field trip that proved interesting and educational gave the participants an insight into the workings of a federal agency was the visit of Professor Purmell and his horticultural majors to the Eastern Regional Research Laboratory of the U. S. Department of Agriculture located in Wyndmoor, Pa., adjacent to the Chestnut Hill section of Philadelphia. Dr. R. E. Lothrop, Assistant Director, acted as our guide on a tour of the laboratory.

Purpose and Layout of Building

Before Dr. Lothrop took us on the tour he gave us the history, purpose, and the physical layout of the building. This laboratory, which serves sixteen eastern states, is one of four set up by Congress in 1938 to study the major farm commodities of the area; a similar institution exists for the North, the South, and the West. This laboratory studies tobacco, apples and other fruits, potatoes, milk products, vegetables, animal fats and oils, and tanning materials. The three-story U-shaped building is divided into offices in the center, a lab wing housing seventy-two labs where the new products are developed, and a pilot plant in the other wing where the products are tested under small scale commercial conditions.

Next, Dr. Lothrop took us to different labs to see some of the products developed there and to meet some of the men who helped them.

Introduced to Dr. Couch

Dr. Couch, the man who discovered that buckwheat is an excellent source of rutin, showed us this new drug and told us of its development. Rutin, a flavonone glucoside, is a yellow pigment occurring in many plants; it is used by the medical profession as a therapeutic agent for the treatment of increased or abnormal fragility of the capillaries. It is especially useful in treating persons subject to retinal hemorrhages and apoplexy. Formerly tobacco was used as a source; but buckwheat is cheaper; its leaves and flowers containing about 4% of the substance. This discovery should prove a double blessing to the farmer because not only more acres of buckwheat will be required to meet the growing commercial demand to fill medical requirements, but also more than one crop a season can be grown since the plants are cut green and not permitted to mature as they would for grain purposes.

Usage of Vegetable Wastes

Dr. Kelly told us about the vegetable research program to divert these materials into animal feeds or industrial uses. About 70% of the material grown is discarded in the fields and packing houses. The reasons for this frightful waste are as follows: most vegetable wastes are dumped or destroyed to prevent the spread of disease and in ordinary silo storage too much decomposition takes place and the materials lose much of their value. To preserve the food values of these wastes, it has been found that 80 to 90% of the moisture should be removed by heat. In this flash drying process Vitamins A and B are preserved. For concentrated feeds the leaves must be separated from the stems in the process. The resultant leaf meal feeds often not only have two times the vitamin content of alfalfa but also in some cases have more protein. Broccoli leaf meal has 35 to 38% protein. Other vegetables wastes used are carrot, beet, and turnip tops, pea vines and waste spinach. A drying plant has been set up at Seabrook Farms to produce these meals on a commercial scale. Although this source of added income may not be available to the average farmer for some time, this new process shows promise of alleviating the vegetable waste problem.

Another interesting product developed here is an allyl starch finish with amazing resistance to organic solvents, oils, acids, and hot and cold water. This coating has excellent spot resistance to acetone, ether, carbon tetrachloride, and alcohol which blemish most finishes. Lighted cigarettes or hot dishes do not mar this finish. Allyl starch can be converted into a thermosetting type plastic which has huge potentialities for use with fibrous or other sheet materials in the preparation of laminates.

In the center of a small room was an electron microscope valued at about $10,500; on the walls were pictures of viruses magnified 50,000 times. Some bacteria at the same magnification would fill up most of the picture.

Other equipment we saw was a recording photoelectric spectrophotometer, modern x-ray equipment used in determining atomic arrangement within the molecule, and a saccharometer.

Workmen in the pilot plant were testing a new source of tannin, the canegra plant. The tuberous roots of this plant which grows in the Southwest are a fairly good source of this vital tanning material which comes mostly from Argentina. If this process proves commercially feasible, it will not only provide a home source of this material but it will also give the farmers of the Southwest another important crop to grow.

We were all convinced that this institution was a good example of the efficiency of a federal agency.

Administration Releases New College Catalogue

Recently, the first complete catalogue was released by the National Agricultural College. This 64 page, 6 x 10 inch booklet has a 5,000 copy printing with another 5000 to follow shortly.

Some of the new points included: the college calendar for 1948-1950, Board of Trustees, Administration, Faculty, Staff, General Information, Aims and Purposes of the college, Admission Requirements, Scholastic and Citizenship requirements, General courses of study, Student Activities, Tuition, Room and Board Fees, Requirements for Graduation, Curriculums to be followed, Description of Courses, and Textbooks to be used with each course.

This catalog is the first of its kind at this college and contains full descriptions of the courses and curriculum in major fields of study for four years of work leading to the degree of Bachelor of Science in Agriculture.

Some of the new items or changes that were made known for the first time are: an annual $10.00 parking fee, graduation requirements (163-168 credits), a charge of $15 per semester credit for any scholastic load in excess of 21 semester credits, and that Dr. Barnhardt was appointed as Dean of Faculty.

This informative bulletin may be obtained by writing to:

Director of Admissions
National Agricultural College
Farm School, Bucks County, Penna.

— *Alumni News* —

Alumni from all sections of the country flocked to their alma mater last week as the 1949 Alumni Reunion Weekend brought forth a record crowd of former students.

This year it was for a special reason. After months of talk the new dormitory building finally got under way. Dedication cermonies were also held. At this time we are unable to give out more information about this new structure, but next fall's first GLEANER will have a special feature concerning it.

The program of events for this weekend was as follows:

Sunday, May 29—

1. Business meeting was held in the Segal Hall.
2. Meeting of the Alumni Foundation.
3. Individual class reunions.
4. Alumni banquet in the evening.
5. A dance followed the banquet, held in the gym.

Monday, May 30—

1. Memorial services for Dr. Krauskopf and deceased alumni.
2. Softball game and other activities.

We are sure that this weekend will be long remembered by all those who were present.

* * * * * * * * * *

Arthur Snyder '40 is now in charge of the Guernsey herd at Kings College, at New Castle, Deleware.

From Irwin Stenn '29, President of the New York Chapter we hear that:

The New York Chapter ran a bingo and card party on May 18 at the Riverside Plaza Hotel. A crowd of 250 people attended. This money will be used to help build a stronger chapter . . . the class of '29 is busy organizing the entire class. Harry Rogin mailed fifty letters to every part of the country for members . . . Phil Gorlin '38 recently spoke at a chapter meeting on ragweed control. Phil is connected with the Department of Health in charge of ragweed control in New York City . . . Carl Schiff '27, Arboriculturist of the Borough of Brooklyn, just returned from a vacation in Florida. He reports that Herman Litwin '27 has a home down there completely heated by the solar heating system, or sun radiation . . . Julie Wolk '29 died a few months ago in an army hospital . . . Ed "Yolke" Mayer '27 after years of roaming through the Southern part of the United States and Mexico, has written several novels depicting the injustices to the Mexican peon. Recently he was on the radio speaking on an "Author and Critic" program in defense of his book *"No Man Alone".*

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ALUMNI SUBSCRIBERS, if you change your address please notify us immediately. The post office has been returning GLEANERS from subscribers who changed their addresses without notifying us.

* * * * * * * * * *

HELP US!

This will be the last issue of the GLEANER for this school year. With our first issue next fall we hope to be able to put out a magazine with more pictures, more pages and with a colored cover.

We still need that 1000 circulation in order to be able to do this. How about helping us get those few hundred subscribers we need in order to reach our goal?

The total alumni subscribers that we have now is only a little over 100. This is only about 10% of the entire alumni. We are sure that many would subscribe if they knew that such a magazine existed. We still have kept the price of the GLEANER down to $1.50 a year which hardly covers the cost of printing it, but we feel that if you will subscribe we will be able to make up the cost in other ways. So how about it?

In closing this column, I wish to thank everyone who has helped us in making it possible through their efforts to get us news as well as subscriptions. Many of us will be seeing alumni all summer as we go out to work on farms. Who knows, but we may be working on farms of our alumni. Next fall we should have a column as well as a magazine that will bring you back to your own days at school.

So long until next fall.

———△———

Who Buys What?

(Continued from page 8)

to buy, producers must know their markets in order to stay in business. But unrelated facts are of no use at all. A textile manufacturer, for instance, must know what percentage of the tobacco in a given area is shade grown. He doesn't care about the number of children in that area, while the latter fact will be important to a toy manufacturer.

A large part of such facts are obtained from such sources as government census, life insurance companies, sales management, business census and public utility companies. Distributors also check on the circulation of various newspapers and other publications, then plan their advertising campaigns in order to reach the biggest concentration of consumers.

The speaker next described special market conditions in the various fields of agriculture. In beef production, he explained, you must plan where and when to sell at best advantage, and investigate new markets such as deep-freeze buyers. In pork production you must plan your market to avoid selling in a section where people refuse to eat pork. He recommended investigation of new processes for smoking pork as is now done with turkey. "Such markets don't exist," said Mr. Rosenwald, "they are created."

(Continued on page 15)

NATIONAL AGRICULTURAL COLLEGE
1949 FOOTBALL SCHEDULE

Sat., October 8	New York Agricultural and Technical Inst.	Home
Sat., October 15	New Haven State Teachers College	Home
Sat., October 22	Kings College	Home
Sat., October 29	Potomac State Teachers College	Away
Sat., November 5	Glassboro State Teachers College	Away
Sat., November 12	Wilkes College	Away
Sat., November 19	Lycoming College	Home

Sulfur and Its Derivatives for the Cure and Prevention of Coccidiosis

By Nathan Sandler '50

The protozoan disease coccidiosis is probably one of the most prominent diseases that confront the poultry industry today. This can be said, because for all practical purposes commercial poultry farms are advised not to free chicks completely of the germ coccidia because it aids in building up resistance and a high degree of immunity to further attacks of this dreaded disease.

Because all chicks are carriers of this disease, it is evident that outbreaks of the disease may occur from two weeks of age on. For this reason, it is most advisable to use all sanitary precautions to prevent outbreaks.

The cecal type of coccidiosis harbors in the ceca (commonly known as the two blind guts) of the fowl. The minute parasites burrow into the walls of the ceca causing a breakdown effect of the tissues, so that hemorrhages are produced and blood occurs in the droppings. Death ensues due to internal bleeding.

The intestinal type occurs in the upper part of the small intestines known as the duodenum. The affected portion of the intestines is characterized by ridges, yellowish or gray in color, that appear thickened and rough. When this organism is present in large numbers they interfere with absorption and digestion of food, and little or no hemorrhages are found.

In the past coccidiosis has been fought by rigid sanitation methods. The use of buttermilk or a flushing ration was the primary method of curing the disease. Such a method, however, weakened the birds considerably.

For the past few years, experiments with sulfa drugs have proven more efficient in dealing with coccidiosis.

Sulfamethazine is one of the newer and more powerful antibiotics now being used for controlling coccidiosis. This drug has been experimented with since 1942. It has been found that sulfamethazine at the rate of .4% in the mash for three successive days has caused zero mortality as well as a positive immunity. This drug may also be administered by giving 32cc per gallon of water. Sulmet is a commercial product and a derivative of sulfamethazine.

Sulfaguanidine has been compared with sulfamethazine but the experimental results have not been the same. Feeding at the rate of 5% in the mash has shown about 5-10% mortality. The birds also appear to be in a more or less vigorous condition. It can be said that although sulfaguanidine when used does aid in the curing of coccidiosis it is not as effective as sulfamethazine.

Sulfaquinoxaline is newer than most of the other sulfur drugs of this type on the market. Up until recently you needed a prescription to purchase the drug because of its potency if used incorrectly. Sulfaquinoxaline as sulfamethazine may be fed in the water or in the feed. It is advertised that sulfaquinoxaline can be fed continuously in the ration until the birds are over the danger period. As a preventative use one-quarter of a pound per ton for cecal and intestinal coccidiosis.

Sulfaquinoxaline is advertised as reducing the death rate avoiding the stunting effect that coccidiosis might give, increasing feed efficiency, and allowing birds to build immunity to the types of coccidia to which they are exposed.

A series of tests conducted under the supervision of the Rhode Island Experiment Station showed that chickens fed

(continued on page 15)

THE QUEENLY FLOWER

By Stan Barber '52

Long before the beginning of the Christian era, the Chinese had in their floral kingdom a wonderful specimen, named because of its rare beauty, the Queenly Flower.

Orchids first came to this country in or about the year 1838 from Hackney, England, and were shipped to a Mr. Book of Boston, Massachusetts. Mr. Book's collection was later exhibited by a Mr. Lowell before the Massachusetts Horticultural Society. From then on orchids spread throughout the country. Mr. William Kelly, who owned a collection once wrote, "I was so delighted with the plants and flowers that I caught the orchid fever, which I am happy to say is now prevailing to a considerable extent in this country, and which I trust will become epidemic." This is just what happened in the United States during the next fifty years, thus making this country the largest grower of orchids in the world.

The orchid seed is cultivated in a flask or small six to eight ounce bottle which functions as a miniature greenhouse. The seeds are placed in this small greenhouse which contains a nutrient solution mixed into a jelly of 2% agar. A plug made of sterilized cotton which will admit sufficient filtered air is placed in the flask or bottle.

After white air roots are showing in slightly longer than a year's time, the seedlings are placed in three inch community pots, twenty to thirty per pot. This task is one of the most important operations in orchid culture. Osmunda regalis, an extremely coarse material, is used for potting orchids, as the plant medium. The orchids will produce flowers from four to seven years depending on the variety and quality of the plant.

The mature plants are very hardy, and can stand more punishment, than many other plants. Typical orchids are characterized by their thick waxy leaves.

There are four general classes of orchids, grouped according to their root systems.

1. Epiphrytic plants which have an aerial root system. This root system takes all the necessary food directly from the atmosphere.

2. Semi-epiphrytic, which is very common. The violet colored orchid you gave your best girl is found in this group. This type of plant also gets its food from the air, however, most of it comes from natural sources.

3 and 4. Semi-terrestial and terrestial classes both grow in soil, light and heavy soil respectively. Cypripediums are found in the terrestial class. Some of this group is grown in Pennsylvania.

Successful cultivation of orchids depends primarily upon the individual grower, good judgment, experience, painstaking care, and a "love for the work," will produce good healthy plants.

Prevention of Coccidiosis

(Continued from page 14)

one-quarter of a pound per ton sulfaquinoxaline continuously had an average mortality of 1.0% from coccidiosis while untreated pens had an average mortality of 17.43% under the conditions of the experiment. Furthermore the treated birds had a weight advantage of one-third of a pound per bird over that of untreated birds.

All above experiments and uses of the sulfa durgs have been administered under controlled conditions. Conclusions can be stated that the use of sulfa drugs for the cure and prevention of coccidiosis has been very encouraging. It is probable that the discoveries of the various drugs will more or less reduce the constant fear of combating coccidiosis and that this disease will no longer trouble the poultry industry.

△

Who Buys What?

(Continued from page 13)

With vegetables again, you must determine to which market you will send your produce. The per capita buying capacity of your customers may determine how you wish to grade your produce. You can always grade things down but not up. In fruits, the speaker said, there are many improvements to be made in marketing; Florida, California and the Pacific Northeast States have led in this field.

In Ornamental Horticulture, Mr. Rosenwald reported, one fourth of one cent of the consumer's dollar is spent on flowers. One-tenth of this is spent in New York City. Many new markets can be created in this field such as that of supplying boutonnieres to conventions as spirit boosters.

All in all, Mr. Rosenwald showed in his talk, how bigger profits may be made by a combination of knowing one's market, and using imagination plus good sales technique in marketing.

CONGRATULATIONS

To Mr. and Mrs. David Segal upon the birth of a baby girl on Saturday, May 21st.

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RADIOACTIVE FERTILIZERS

(Continued from page 9)

instituted on a farm in lower New York State near New York City, the purpose of which was to determine the effect of administering certain fixed dosages of the alpha-radioactive compounds on certain vegetable crops. This compound was to be an added component of the organic or inorganic fertilizers, usually employed in the planting of these selected species of vegetables. The compound used was alpha-radioactive, and equivalent in radioactivity to Uranium oxide (U_3O_8). The gardens were laid out as follows: 9 plots 25x75 feet each with 6½ feet between tracts. On each plot, different fertilizer combinations were used, so that the results would be indicative of the productivity of each of the respective formulae.

The entire area had been tested for potential nitrogen content, and was accurately graded. During the four preceeding years, the land had been fallow, previous to which the area had been used for hay production, and was limed heavily in 1939. The plots were all plowed commonly and all treated with 231 kilograms of 20% superphosphate applied in such a manner as to insure a deep penetration of the phosphate into the soil. This was accomplished by spreading the phosphate and other fertilizers with a fertilizer spreader, after which the land was harrowed from north to south, and then from east to west.

Three distinct dosages of the ingredients were employed whose specifications had been worked out by Dr. Ladislas Goldstein and Professor Francis Perrin in conjunction with Mr. Pregel. Three plots were radioactivated, to act as controls for the project.

The crops used were cabbage, peppers, tomatoes, beans, leaf lettuce, radishes, carrots, peas, and cauliflower. Planting started on May 21, and continued for seven days. Perfect June weather conditions more than offset the late planting date, and special care was exercised to plant each variety of vegetable at the same time so that growth results would be comparative at equal periods. Each of the plots received similar cultivation and attention.

The radioactive compounds applied were used with either commercial fertilizers or with dehydrated cow manure. These mixtures were applied in the spreader described as being used for the superphosphate. After the fertilizer application, the plots were harrowed once, from north to south, and then planting commenced as indicated.

Results of Experimentation

These experiments established the fact that weak additions of alpha-radioactive compounds to an active organic or inorganic fertilizing agent not only brought plants to earlier maturity, but in all but one instance produced a greater crop yield, ranging from 13% per vine in beans treated with a mixture of inorganic fertilizer and radioactive compound, to 53% per planted area in the case of leaf lettuce treated with a mixture of organic fertilizer and radioactive compound.

Further experiments conducted on another test farm during 1946-1947 produced a greenhouse tomato crop showing a 23% increase in tomato weight and a 19% increase in the yield per plant. Moreover the ripening time was shortened by two weeks.

In a third set of experiments undertaken by an unnamed American food processing and canning company, a 51% increase in the number of cucumbers produced was noted along with a 60% weight increase. These experiments were carried out on test farms in Delaware, Wisconsin, and Ontario (Canada). All proved one basic point: in the majority of experimental cases, best results were obtained when extremely small amounts of the radioactive compounds were used.

A resume of the practical results proves that:

(1) a considerably greater yield of crops was produced;

(2) the plants matured earlier;

(3) the plants produced under test conditions were sturdier, better adjusted to resist adverse atmospheric conditions and, in all probability, certain plant diseases;

(4) a better quality of texture, meatiness and taste, and a higher carbohydrate content was produced, because of an increase in the invertase fermentation in live plant cells under the influence of radioactive substances.

The problem of incorporating these infinitesimal amounts of the radioactive micro-elements evenly through the fertilizer and soil was also solved through these experiments.

Because such minute quantities were involved, the cost of these compounds is of little importance to the user.

Effect of Radioactive Elements

The response to radiation is due to the fact that radioactive elements enact a role similar to that of the vitamins. Vitamins do not replace nutritive matter, yet, lack of vitamins in food may cause serious diseases in the human body. The presence of minute quantities of these radioactive elements in plants assures a proper balance of those microscopic and ultra-microscopic elements without which a plant cannot grow well. Therefore, very frequently these minute quantities of radioactive elements are necessary, and not large amounts of a nitrogenous or phosphorous fertilizer.

In experiments conducted with leguminous plants, it has been found that nitrogen forming tubercules do not form on the roots of peas or beans in the absence of the radioactive elements. Evidently the radiation aids in the formation, because the tubercules develop with intensity and assimilate almost as much of the atmospheric nitrogen as they absorbed of the nitrogen mixed with and contained in the nutritive matter.

The action of these elements on plants consists primarily of that energy which, in the form of rays, is continuously emitted from these elements as a result of uninterrupted processes of radioactive disintergration. This atomic breakdown of radioactive elements within the nutritive medium of the plant itself plays an important part in the synthesis of organic combinations, such as carbohydrates, proteins, and others within the living cell.

Thus we are led to the striking conclusion that, under the action of radioactive elements, there may be not only chemical reactions induced within the living cell but also nuclear reactions taking place in living cells, including those in the human body itself, as has been shown by Dr. Aristide V. Grosse, Marcus Hook and other associates. Dr. Grosse shows that these nuclear reactions within the living cell may be explained by the action of cosmic rays with the ensuing formation of Carbon 14.

General Considerations

In connection with the use of these radioactive elements in agriculture, it must be emphasized that the dosages are so minute that they may be and sometimes are identical with those quantities of the elements normally found in rich soil. The infinitesmal quantities of these radioactive micro-elements have a harmless effect on a living body when absorbed by men or animals through the consumption of plants grown in radioactivated soil.

Many scientist believe that the introduction of radioactive substances will hinder the growth of plants, rather than aid it. However, these developments undoubtedly will lead, and are leading to a revolution of the agricultural industry. Let us hope that mankind can utilize these new developments to benefit himself before he destroys himself through the use of these same forces.

Radioactivity in its application to the life of plants, that is, the use of radioactive compounds in agriculture has become a reality. This reality cannot, and must not be overlooked in humanity's struggle for a better, richer, and happier world.

NOTE: *The information contained in this article is based upon material which originally appeared in* THE FARM QUARTERLY *and is used with the permission of that publication.*

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BEWARE, DDT!

New Insecticide May Prove Dangerous to Human Welfare

By Don Selak '50

The symbol DDT is a contraction for dichloro-diphenyl-trichloroethane, the generic name of the active insecticidal principal. The term DDT has been confined to the product obtained on condensation of chloral (or its alchoholate or hydrate) with chlorobenzene in the presence of sulphuric acid. The product thus obtained is termed technical DDT. It is a white to cream-colored powder, possessing a fruitlike odor.

Achievements with DDT

DDT was first synthesized in 1874, but it was only six years ago that a Swiss chemical manufacturing firm discovered its great value as an insecticide. The first samples were sent to the United States in 1942.

Insects are not killed immediately upon contact with a DDT residue. As they crawl over it, however, the DDT is absorbed into their body through the feet and the body wall. This insecticide affects the nervous system. Death may occur, in the case of flies and mosquitoes, within half an hour; bedbugs in a few hours; roaches within a week. Of course this depends upon the resistance of the insect and the condition of the deposit.

Most people are familiar with the stories of the wonder insecticide of World War II, which worked for the Army and Navy. DDT killed every fly and mosquito on whole islands in the Pacific. It made a healthful rest camp out of that pest hole, Guadalcanal. It stopped the Typhus epidemic in Naples, and prevented the spread of typhus among the displaced persons of Europe.

DDT is extraordinarily effective in ridding animals of body lice and fleas. But it is also poisonous to the treated animal, if used indiscriminately. Too few laymen recognize the latter fact.

New Facts Revealed

Not long ago *Veterinary Medicine* published an article by Dr. Hamilton Kirk of London on "DDT in Canine Practice." The author observed:

"As a result of the wide publicity given to DDT as an insecticide, the general public has been given an impression that the substance is nontoxic for man and animals. This assumption is incorrect. Cats appear to be especially susceptible to DDT poisoning, probably because of their habit of licking their coats after dusting or spraying. Experiments indicate the accumulative effect, resulting in chronic poisoning, is far more serious than acute reaction among sensitive animals."

Dr. A. J. Lehman, chief of the pharmacology division in the U. S. Food and Drug Administration, reports " . . . cows sprayed with DDT, or housed in barns where the air is contaminated with DDT, may inhale sufficient quantities that could be detected in their milk or fatty tissues."

The Food and Drug Administration warned that it would consider any milk containing detectable quantities of DDT as contaminated and unfit for human consumption.

In one experiment cited by Dr. Lehman, empty dairy barns were sprayed with DDT. Then cows were allowed into the barns. DDT showed up in their milk.

In another case, fodder containing 8 parts per million of DDT was fed to a cow. That cow's milk contained 160 ppm of DDT—20 times as much as was ingested in the fodder.

And yet farmers, uninformed or insufficiently advised about the toxic dangers of DDT, have been spraying the insecticide in heroic proportions, two, three and more times the recommended amounts, all over their cows, barns, and cattle fodder in the belief that more pests would be exterminated that way.

We have been drinking that milk,

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A Growing Institution

By Jeff Steinman '50

Like a seed that has been sown in a field properly prepared for planting, the National Farm School has blossomed forth into an approved four year college. This was not an easy task, but under the capable leadership of its first president, James Work, the National Agricultural College is taking its place among the leading colleges of Pennsylvania.

Your reporter attended this institution when it was known as the National Farm School, a school at that time with few classrooms, one laboratory and a mere handful of instructors; a school whose main purpose was to prepare students for the practical aspects of agriculture. The educational leaders who added the impetus in the transformation from a Farm School to an approved four year college realized that the practical aspects of a vocation were not sufficient to prepare prospective leaders of the community. They believed that agriculturalists do not live in a vacuum, and therefore a complete education enveloping the social as well as the practical aspect of life was necessary. Under this philosophy, the National Farm School became a four year college.

When I returned to the National Agricultural College, I found that instead of the former limited equipment, we now have adequate facilities for the functioning of a four year college. The faculty was composed of leading men in their respective fields; course material and methods of instruction were on a par with any other agricultural college.

Our poultry judging team exemplified our college status by making its initial appearance at the poultry judging contest held at Rutgers University, where it placed sixth in a group of ten.

The climb uphill will not be an easy task. The growth in the past two years has been tremendous, but we must not rest on our laurels. Dormitories and classrooms are still needed if we are to expand.

We of the student body pledge our support to the faculty, and feel most certain that this team working in the proper spirit will build an institution of learning which will find its place amongst the leaders of the educational field.

Stay as You Are

By Roger Gable '50

During the last few weeks I am sure we have all been contemplating the approaching summer holiday. Think of it, no more worries, no more exams, nothing to do but bask in the sun, and tan as you slowly trod back and forth to work. No longer will it be necessary to get up at a quarter to seven in the morning, rush for chow, then run to make an eight o'clock class. No more hot stuffy rooms. Ah, what thoughts. The new summer schedule reads like an enchanted book, up at six-thirty, breakfast at seven, and a mad rush for work to be there at eight. Ahead of you lies seven or eight hours in a nice, cool, airy greenhouse, the temperature hardly ever rising above ninety degrees. No more brain-racking chemistry or algebra. Now it's nice, long nights of sleep, to bed at twelve and up at six-thirty. (Don't forget to take a few toothpicks to work. By noon you'll need them, unless you can work with your eyes closed.)

And just imagine all that free time! What do you intend doing with it? After you've mowed the lawn until dusk, weeded a few flower beds around the house, beaten a few rugs, cleaned a few windows, and simonized the car, you're bound to find yourself with at least half an hour of leisure time every evening. Don't waste it. Read a good book. Why, if you just devote that half hour every evening to reading, by the end of the summer you may have read a complete comic book from cover to cover.

Can you also imagine how happy you'll feel as you set out on a Saturday evening, with your pockets bulging with money, weighed down by three dollars of pennies? (Oh well, you're no crook, you'll pay back your kid brother next week. In fact, you even intend to replace the piggy bank you broke.)

Imagine how proud you'll feel when you can again walk up to a soda fountain, throw down ten pennies on the counter and bellow out ". . . a large Coca-Cola, and make it heavy on the coke." (You should worry about the law, you're over eighteen.) With you and your girl it's no longer hotdogs at Maxie's, but hamburgers at Sard's. By mid-summer you're a heavy smoker, two packs a week, not one as before. You've also built up a reputation about town as a heavy tipper, not a nickle, but a whole dime, and every time you and your girl eat out, too. Ah, to be rich like this all your life! No more fifty cent seats in the movies, loges upsrairs at sixty cents!

You no longer hesitate to pull up to any gas station and brazenly say "fill her up." Attentively and proudly you watch the pump meter register two gallons. This is living.

One word of caution, my friend. No matter what happens don't let all this money go to your head. Let your heart remain generous and never let it be said that during that entire summer you once looked down upon the common man.

THE GLEANER STAFF
Takes This Opportunity To
Wish the Students Best of
Luck on the Forthcoming
Examinations.

Beware, DDT!

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and feeding it to our children.

The U. S. Dept. of Agriculture, at this late date, now "recommends" that dairy farmers stop spraying their cows or dairy barns with DDT.

The promiscuous and improper use of insecticides may lead to other serious problems. There is especially danger of destroying the beneficial forms of life, including insect predators, fish, frogs, or even birds by the use of a material such as DDT. The killing of honeybees and other insect pollinators by insecticides must be prevented if we are to produce abundant yields of legume seed fruits. There is also danger of plant injury from the use of insecticides, either directly from improperly compounded or diluted material, or through soil contamination. Research has not only found some effective insect killers, but it has indicated the precautions that must be taken in their use to safeguard the crops, wildlife, and health of our domestic animals and ourselves.

Pennsylvania Affected

Pennsylvania recently postponed its DDT spraying program against the gypsy moth in Bucks County until an investigation was made of the insecticide. Four airplanes were scheduled to take off and spray 30,000 acres infested with the moth.

The State legislators adopted a resolution stating that ". . . certain DDT insecticides destroy birds, bees, and earthworms." It added the proposed spraying may cause "irreparable damage and perhaps a lasting injury to animal life and a threat to human welfare."

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